

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

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PTO-1556
(5/87)

**APPARATUS FOR ILLUMINATING A PORTABLE ELECTRONIC
OR COMPUTING DEVICE THROUGH A PLUG-IN CONNECTION
TO A UTILITY POWER JACK**

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This is a continuation-in-part of U.S. patent application Ser. No. 09/330,322,
attorney docket number 241/057, filed June 11, 1999 and ^{now US Patent # 6,186,636} ~~currently pending, the~~
~~specification of which is incorporated herein by reference.~~ This application claims
priority to Serial No. 09/330,322 under 35 U.S.C. §120.

Field of the Invention

The present invention is in the field of lighting devices for portable electronic or
computing devices.

Background of the Invention

Compact electronic devices with a viewing screen or keypads have become very
common and quite popular. Such devices have been popular for a number of years in
connection with hand-held, portable, battery-powered gaming devices. A well-known
example of such a device, that has sold millions of units, is the GAME BOY® device
sold by Nintendo. More recently, other electronic devices have also included viewing
screens, such as portable video cameras and cellular phones. And, of course, portable
computers have long had viewing screens. Although the complexity and cost of such
devices can vary greatly, it is common for such devices to use a generally flat, liquid
crystal display screen.

Flat, liquid crystal display screens work very well in a well-lit area. However, when such devices are used in dimly lit areas, or at night, it can be difficult, if not impossible, for a user to see anything in the viewing screen. This problem is magnified when such a screen is used in a device that is meant to be portable, and especially

5 when it is a small device.

If a portable device is sufficiently complex, and generally more expensive, such as a portable laptop computer, the device can include lighting within the actual device. An example of such lighting is a portable laptop computer with a backlit screen.

However, this solution is not always economically practical, nor does it necessarily solve the problem in smaller devices. Also, if an electronic device does not have a viewing screen, then this option is not even available.

To solve this problem, especially in connection with hand-held, portable, battery-powered gaming devices, a number of different solutions have been proposed. Such solutions have typically included add-on devices with their own source of electrical power. These devices can be designed to fit onto the electronic device or be designed for use in connection with the electronic device. However, because such devices use their own source of electrical power, they tend to be rather bulky and heavy. In addition, the second source of electrical power increases cost and creates the possibility of another source of power failure.

Accordingly, there is a long felt need for a simple, economical, device that can illuminate portable electronic or computing devices without the drawbacks associated with prior illumination devices.

SUMMARY OF THE INVENTION

The present invention is generally directed to an apparatus for illuminating a portable electronic device that plugs into the electronic device and is powered by the power source of the electrical device through an electronic connection to a utility power jack of the electronic device. The present invention is also generally directed to an apparatus for illuminating a portable computing device with a display screen that plugs into the computing device and is powered by the power source of the computing device through an electronic connection to a utility port in connection with a power source.

In a first, separate aspect of the present invention, the illumination device can be controlled by a dimmer. The illumination device can use a light emitting diode and a white light diode is especially preferred.

In another, separate aspect of the present invention, the illumination apparatus includes a plug that has a second utility power jack or port adapted to receive a second plug that is in electrical communication with the utility power jack or port. The plug contains one or more support wings. These support wings can be used to prevent movement of the body in a certain direction, especially when they are located on opposite ends of the plug.

In still another, separate aspect of the present invention, the illumination apparatus can include a flexible arm. This flexible arm can be adjusted as to adjust the height or angle of the illumination device relative to the portable electronic or computing device. In addition, other devices, such as a diffuser, a magnifier, a reflector, a dimmer,

or a regulator for varying the intensity of light, can also be added to the illumination apparatus.

Accordingly, it is a primary object of the present invention to provide a low-cost, practical and improved illumination apparatus for a portable electronic device that is
5 powered by a utility jack of the electronic device.

It is also a primary object of the present invention to provide a low-cost, practical and improved illumination apparatus for a portable computing device that is powered by a utility port of the computing device.

This and further objects and advantages will be apparent to those skilled in the art in connection with the drawing and the detailed description of the preferred
10 embodiment set forth below.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a schematic representation of a preferred embodiment of the present
15 invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Figure 1 illustrates how a preferred embodiment of the present invention can be
20 used with a portable electronic game device, such as a GAME BOY® device. Although this drawing depicts a portable electronic game device, the invention is adaptable to any portable electronic device that has a utility power jack in electrical connection with a power source, such as a cellular phone or a video camera.

In the preferred embodiment shown in Figure 1, the electronic device 1 has a viewing screen 2, a power source and a utility power jack. The power source and utility power jacks are not visible and are shown generally as 3 and 4, because their location and configuration will vary depending upon the design of a given portable electronic device. The power source 3 may be self-contained, such as batteries in a battery compartment. The power source 3 may or may not be augmented by a plug-in capability to a non-portable power source, such as a wall outlet.

The illumination apparatus, shown generally as 5, includes a plug, shown generally as 6, for plugging the illumination apparatus 5 into the utility power jack 4 of the electronic device 1. The exact configuration of the plug 6 should be designed so as to mate with the utility power jack 4 and create a mechanical and electrical connection between the utility power jack 4 and the plug 6 when the apparatus 5 is plugged into the electronic device 1.

The illumination apparatus 5 also includes a body 7 and an illumination device 8. The body 7 connects the illumination device 8 to the plug 6, and the body is preferably comprised of a flexible arm. The illumination device 8 is electrically connected to the utility power jack 4 through the plug 6 and the body 7 so that the illumination device 8 is powered by the power source 2 when the illumination apparatus 5 is plugged into the electronic device 1. The electrical connection between the illumination device 8 and the plug 6 can be by any suitable means, such as by a wire (not shown). It is especially preferred that the body 7 can be adjusted, when the apparatus 5 is plugged into the utility power jack 4, to adjust the height and/or the angle of the illumination device 8 relative to the electronic device 1. In order to prevent the movement of the apparatus in

a direction away from the electronic device, it is especially preferred to attach one or more support wings 16 to the plug 6. These support wings 16 stabilize the plug 6 by providing surfaces that abut the electronic device 1 and thereby prevent rocking of the plug 6 in a plane of the support wings 16. They also make it less likely that the plug 6 will pull away from the electronic device 1 at the location of the support wings 16, thereby stabilizing the connection of the plug 6 to the electronic device 1.

In the preferred embodiment of the present invention, the illumination device 8 is comprised of a light emitting diode ("LED") 9 housed in a case housing 10. The housing 10 can also include suitable electronics, such as a resistor 11, or a regulator (not shown) for varying the intensity of light given off by the LED. In an especially preferred embodiment, the LED 9 is a white light diode. The housing can also include additional features, such as a diffuser 14. The diffuser 14 can alternatively be replaced by a magnifier 14. Another additional feature that may be included is a reflector 13. The reflector 13 helps to concentrate light toward the object to be illuminated while also helping to minimize back-scatter of light generated by the illumination device. The reflector includes a mirrored surface on the bottom of the reflector for reflecting light away from the user. The housing 10 can also include an opaque surface at its end distant from the desired travel of light so as to minimize undesirable back-scatter of light toward a user's eye. It is especially preferred that the housing 10 include a dimmer 15. The dimmer 15 can be a variable resistor, or a potentiometer, connected to a user control, such as a dial.

When the plug 6 of the illumination apparatus 5 is plugged into the utility power jack 4 of the electronic device 1, it necessarily occupies the connection that the utility

power jack 4 would otherwise provide to a user of the electronic device 1. Because a user of the electronic device 1 might need to connect some other device to the utility power jack 4, it is especially preferred that the plug 6 be constructed so as to include a second utility power jack 12. The second utility power jack 12 is adapted to receive a second plug and provide a mechanical and electrical connection for the second plug equivalent to that which is provided by the utility power jack 4. Thus, the second utility power jack 12 will provide electrical communication for the second plug with the utility power jack 4 when the second plug is plugged into the plug 6 and the plug 6 is plugged into the utility power jack 4.

The present invention is also adaptable to a portable computing device with a display screen that is not illuminated by the portable computing device. In such an embodiment, the illumination apparatus is plugged into a utility port of the computing device in electrical connection with a power source instead of the utility power jack 4 of the electronic device 1. In such a device, the utility port can be any port that allows connection of additional products or communication devices, or cables, or any additional accessory or product. The illumination apparatus can have a second utility port adapted to receive a second plug that is in electrical communication with the utility port when the second plug is plugged into the plug and the plug is plugged into the utility port. In all other respects, the structure and function of the illumination apparatus would be the same as for the illumination apparatus 5 described above in connection with electronic device 1.

It will be readily apparent to those skilled in the art that still further changes and modifications in the actual concepts described herein can readily be made without departing from the spirit and scope of the invention as defined by the following claims.

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WHAT IS CLAIMED IS:

1. An apparatus for illuminating a portable electronic device having a utility power jack in electrical connection with a power source, comprising:

a plug for plugging the apparatus into the utility power jack, wherein the plug

5 contains one or more support wings;

a body connected to the plug; and

an illumination device attached to the body and electrically connected to the utility power jack through the plug and the body;

wherein the illumination device is powered by the power source when the apparatus is plugged into the utility power jack.

2. An apparatus as recited in claim 1, wherein the plug contains at least two support wings for preventing movement of the body in a certain direction, where at least one support wing is on a first end of the plug, and at least one support wing is on a second end of the plug.

3. An apparatus as recited in claim 1, wherein the plug has a second utility power jack adapted to receive a second plug that is in electrical communication with the utility power jack when the second plug is plugged into the plug and the plug is plugged into the utility power jack.

4. An apparatus as recited in claim 2, wherein the plug has a second utility power jack adapted to receive a second plug that is in electrical communication with the utility power jack when the second plug is plugged into the plug and the plug is plugged into the utility power jack.

5. An apparatus as recited in claim 1, wherein the body further comprises a reflector.

6. An apparatus as recited in claim 1, wherein the body further comprises a dimmer.

5 7. An apparatus for illuminating a portable computing device with a display screen, the apparatus also having a utility port in electrical connection with a power source, comprising:

a plug for plugging the apparatus into the utility port;

a body connected to the plug, wherein the body further comprises a dimmer; and

10 a light emitting diode ("LED") attached to the body and electrically connected to the utility port through the plug and the body;

wherein the LED is powered by the power source when the apparatus is plugged into the utility port.

8. An apparatus as recited in claim 7, wherein the LED is a white light diode.

15 9. An apparatus as recited in claim 8, wherein the portable computing device is an electronic game device.

20 10. An apparatus as recited in claim 9, wherein the plug has a second utility port adapted to receive a second plug that is in electrical communication with the utility port when the second plug is plugged into the plug and the plug is plugged into the utility port.

11. An apparatus as recited in claim 9, wherein the body is comprised of a flexible arm.

12. An apparatus as recited in claim 9, wherein the body can be adjusted, when the apparatus is plugged into the utility port, to adjust the height of the LED relative to the portable computing device.

13. An apparatus as recited in claim 9, wherein the body can be adjusted, 5 when the apparatus is plugged into the utility port, to adjust the angle of the LED relative to the portable computing device.

14. An apparatus as recited in claim 9, wherein the body further comprises a diffuser for diffusing light given off by the LED.

15. An apparatus as recited in claim 9, wherein the body further comprises a 40 magnifier.

16. An apparatus as recited in claim 9, wherein the body further comprises a reflector.

17. An apparatus as recited in claim 9, wherein the plug contains one or more support wings.

18. An apparatus as recited in claim 9, wherein the plug contains at least two support wings for preventing movement of the body in a certain direction, where at least one support wing is on a first end of the plug, and at least one support wing is on a 45 second end of the plug.

ABSTRACT OF THE DISCLOSURE

An illumination device that can use a white light diode in a flexible arm plugs into, and is powered through, a utility power jack of a portable computing device or a utility port of a portable computing device.

0953331.04E.100

**UTILITY DECLARATION
AND POWER OF ATTORNEY
Utility Application**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **Apparatus For Illuminating a Portable Electronic or Computing Device Through a Plug-In Connection to a Utility Power Jack** the specification of which

(Check One)

☒
☐

is attached hereto OR

was filed on _____ as United States Application Serial No. SerialNumber or PCT International Application No. _____ and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment(s) referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Date of Filing	Priority Claimed	
			Yes	No

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application Number	PCT Parent Number	Parent Filing Date	Status-Patented, Pending or Abandoned
09/330,322		June 11, 1999	Pending

POWER OF ATTORNEY: As a named inventor, I hereby appoint as my attorneys and/or agents, with full power of substitution and revocation, to prosecute this application and transact all business in the United States Patent and Trademark Office, and in countries other than the United States, and to do all things necessary or appropriate therefor before any competent International Authorities in connection with any international patent application(s) corresponding to the above-identified invention application, all of the registered practioners identified by Customer Number 22249:



22249

PATENT TRADEMARK OFFICE

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Suite 4700
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Los Angeles, CA 90071
(213) 489-1600

Please send all correspondence to the attention of Roy L. Anderson, and direct all telephone calls to (213) 489-1600.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Title 18, United States Code, § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

201	FULL NAME OF INVENTOR	FIRST Name David	MIDDLE Initial	LAST Name Naghi	
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INVENTOR'S SIGNATURE			DATE 4/13/00		

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INVENTOR'S SIGNATURE			DATE 4/13/00		

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	POST OFFICE ADDRESS		City	State or Country	Zip Code
INVENTOR'S SIGNATURE			DATE		

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	RESIDENCE & CITIZENSHIP	City	State or Foreign Country	Country of Citizenship	
	POST OFFICE ADDRESS		City	State or Country	Zip Code
INVENTOR'S SIGNATURE _____ DATE _____					

205	FULL NAME OF INVENTOR	FIRST Name	MIDDLE Initial	LAST Name	
	RESIDENCE & CITIZENSHIP	City	State or Foreign Country	Country of Citizenship	
	POST OFFICE ADDRESS		City	State or Country	Zip Code
INVENTOR'S SIGNATURE _____ DATE _____					

206	FULL NAME OF INVENTOR	FIRST Name	MIDDLE Initial	LAST Name	
	RESIDENCE & CITIZENSHIP	City	State or Foreign Country	Country of Citizenship	
	POST OFFICE ADDRESS		City	State or Country	Zip Code
INVENTOR'S SIGNATURE _____ DATE _____					

Applicant or Patentee: David Naghi and Gilbert Fregoso

Serial or Patent No. : not yet assigned

Filed or Issued: _____

For: APPARATUS FOR ILLUMINATING A PORTABLE ELECTRONIC OR COMPUTING DEVICE THROUGH A PLUG-IN CONNECTION TO A UTILITY POWER JACK

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS (37 CFR 1.9(f) AND 1.27(b)) – INDEPENDENT INVENTOR

As a below-named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark office with regard to the above-entitled invention described in

- ☒ the specification filed herewith
- ☐ the application serial no. _____, filed _____.
- ☐ patent no. _____, issued _____.

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d), or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed or licensed or am under an obligation under contract or law to assign, grant, convey or license any rights in the invention is listed below. **NOTE:** Separate verified statement are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

- ☒ no such person, concern or organization.
- ☐ persons, concerns or organizations listed below:

FULL NAME _____

ADDRESS _____

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

FULL NAME _____

ADDRESS _____

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

FULL NAME _____

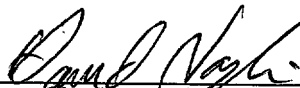
ADDRESS _____

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b)).


I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statement and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

David Naghi
Name of Inventor


Signature of Inventor

4-11-00
Date

Gilbert Fregoso
Name of Inventor


Signature of Inventor

4-11-00
Date

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4-24-00

A

Patent
252/047

04/21/00
jc796 U.S. PTO

To: **Box Patent Application**
Assistant Commissioner for Patents
Washington, D.C. 20231

**NEW CONTINUATION IN PART APPLICATION TRANSMITTAL
UTILITY**

jc530 U.S. PTO
09/553781
04/21/00

Sir:

Transmitted herewith for filing is a **CONTINUATION IN PART** utility patent application of Serial No. 09/330,322, filed June 11, 1999, now pending:

Inventor(s): David NAGHI and Gilbert FREGOSO

Title: APPARATUS FOR ILLUMINATING A PORTABLE ELECTRONIC OR
COMPUTING DEVICE THROUGH A PLUG-IN CONNECTION TO A
UTILITY POWER JACK

1. PAPERS ENCLOSED HEREWITH FOR FILING:

- 8 Page(s) of Specification
- 3 Page(s) Claims
- 1 Page(s) Abstract
- 1 Sheets of Drawings ☒ Informal ☐ Formal

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CERTIFICATE OF MAILING
(37 C.F.R. §1.10)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as 'Express Mail Post Office To Addressee' in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

EL360339531US

Express Mail Label No.

April 21, 2000

Date of Deposit

LA-139925.1

Lorraine Telles

Name of Person Mailing Paper

Lorraine Telles

Signature of Person Mailing Paper

2. **ADDITIONAL PAPERS ENCLOSED IN CONNECTION WITH THIS FILING:**

- ☒ Declaration and Power of Attorney
- ☐ Assignment to _____ t and assignment cover sheet.
- ☒ Verified Statement establishing "Small Entity" under 37 CFR §§ 1.9 and 1.27.
- ☐ Priority Document No(s):
- ☐ Preliminary Amendment

3. **THE FILING FEE HAS BEEN CALCULATED AS SHOWN BELOW:**

BASIC FILING FEE:				\$690.00
Total Claims	18	- 20	= 0 x \$18	\$0.00
Independent Claims	2	- 3	= 0 x \$78	.00
Multiple Dependent Claims	\$270 (if applicable)			
TOTAL OF ABOVE CALCULATIONS				\$690.00
Reduction by ½ for Filing by Small Entity. Note 37 CFR 1.9, 1.27, 1.28. If applicable, Verified Statement must be attached.				\$345.00
Misc. Filing Fees (Recordation of Assignment)				0.00
TOTAL FEES SUBMITTED HEREWITH				\$345.00

4. **METHOD OF PAYMENT OF FEES**

- ☒ A check in the amount of \$345.00
- ☐ Charge Deposit Account No. 12-2475 in the amount of
- ☐ This application is being filed without fee or Declaration under 37 CFR § 1.53

5. **AUTHORIZATION TO CHARGE FEES TO DEPOSIT ACCOUNT 12-2475**

- ☐ 37 CFR 1.16(a)(f) or (g) – (Filing fees)
- ☒ 37 CFR 1.16(a), (c) and (d) – (Presentation of Extra Claims)
- ☐ 37 CFR 1.16(e) – (Surcharge for filing the basic filing fee and/or Declaration on a date later than the filing date of the application)
- ☒ 37 CFR 1.17 – (Any Application processing fees)

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☒ Credit Deposit Account No. 12-2475 for overpayment of fees

Respectfully submitted,

LYON & LYON LLP

Dated: April 21, 2000

By: 

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